EZ-Glider
Position Controller Torque Arm
Operating Instructions

Version 2
April 12, 2010

Features

Secure the assembly process by ensuring that every screw is in the correct location at the right torque.

Programmable sequence operation.

Detects - cross threading, omissions, unfinished rundowns and cycle complete.

Compatible with air and electric screwdrivers.

Password protection and wall mountable.

Can interface with most intelligent driver systems that store multiple torque programs and has external digital I/O control. Prevents cross threading and side load. Keeps tool perpendicular.

Reduces RMI (Repetitive Motion Injury) and CTS (Carpal Tunnel Syndrome) while boosting production.
With the ability to bend like an elbow, the torque arm provides agility to position the tool in a variety of positions for different applications. Arm can be set at an inclination of 0 , 22.5 & 45 .
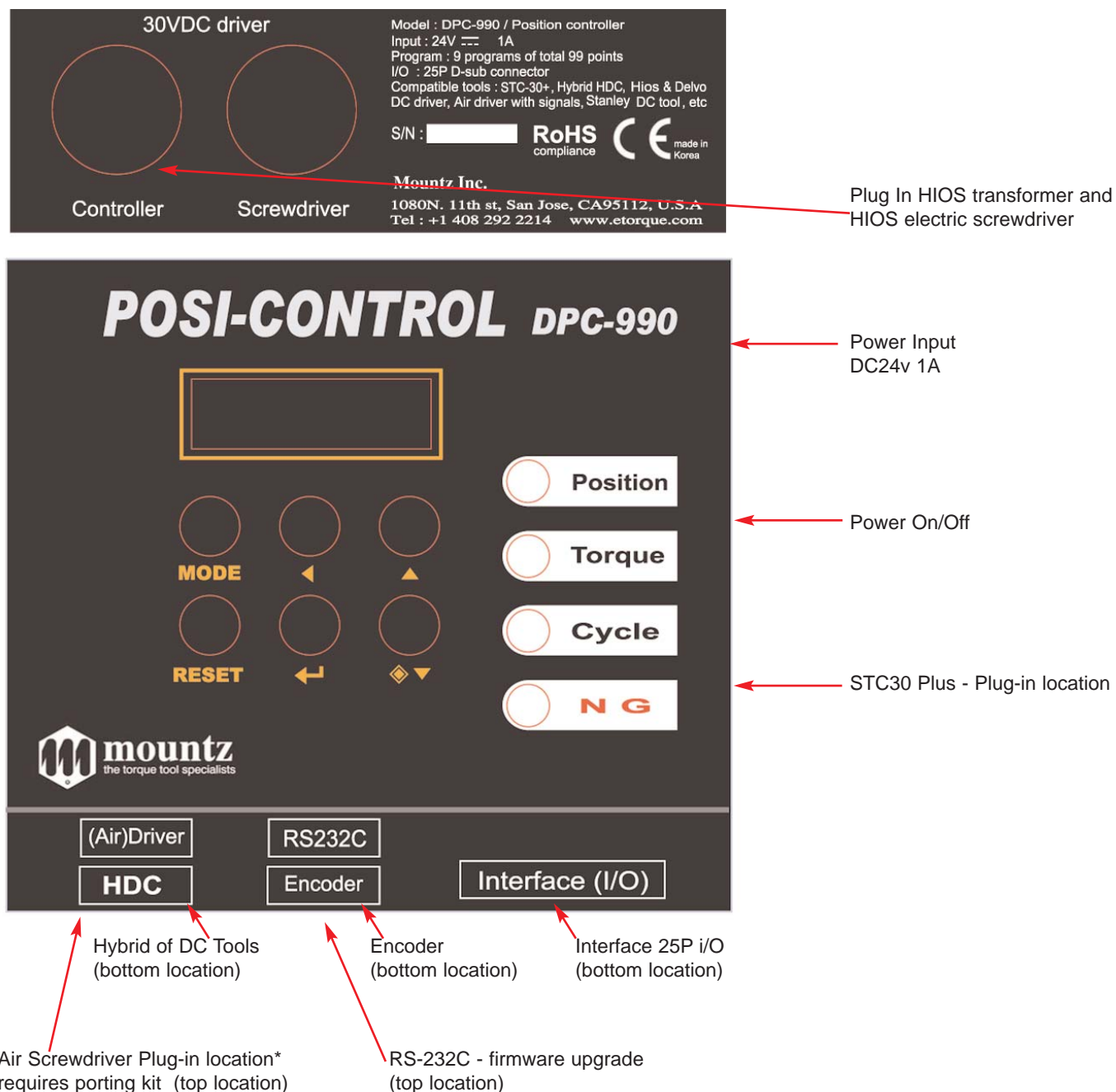
Provides smooth flexible range as the arm absorbs torque reactions from electric & air screwdrivers, angle nut runners, pulse tools, and pistol grip tools.

Quick and easy to setup. Self teaching and automation program mode.

Programmable: Positioning Tolerance, Min. and Max. time for Poka Yoke control (automatic or manual) and 99 memory points
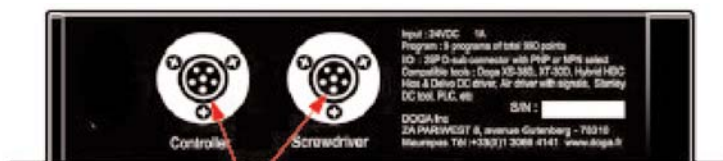
Posi Control Display & External Connections

The Position Control Box allows the arm to be used with a variety assembly tools: Mountz E-DRIV electric screwdrivers, HIOS & Delvo electric screwdrivers, Mountz Hybrid Torque Control System, Air Screwdrivers, and DC Control Tools.
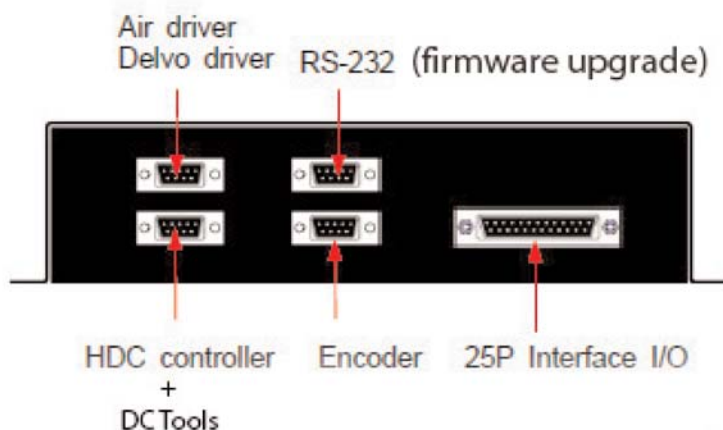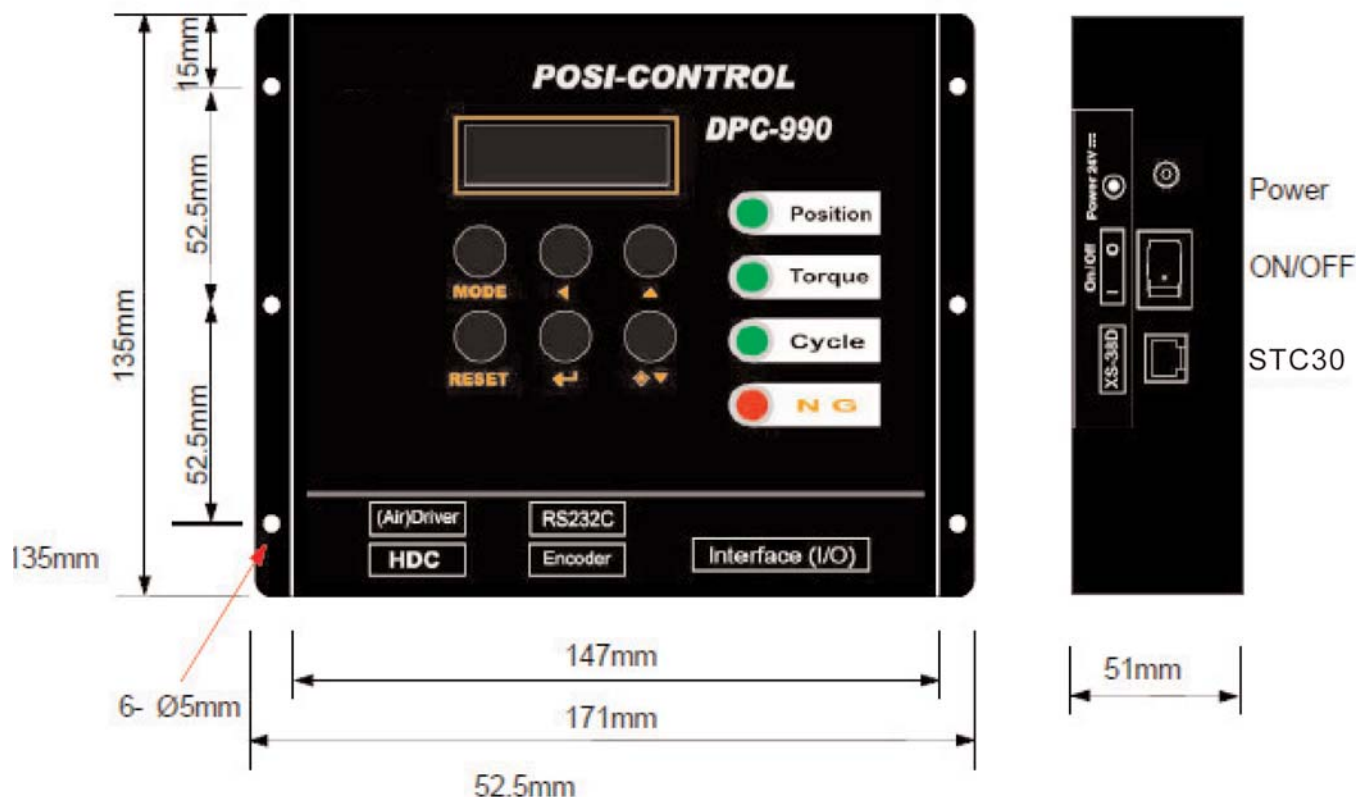
30VDC driver

Controller   Screwdriver

Model : DPC-990 / Position controller
Input : 24V --- 1A
Program : 9 programs of total 99 points
I/O : 25P D-sub connector
Compatible tools : STC-30+, Hybrid HDC, Hios & Delvo DC driver, Air driver with signals, Stanley DC tool, etc

S/N : _____ **RoHS** compliance CE made in Korea

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Plug In HIOS transformer and HIOS electric screwdriver

POSI-CONTROL *DPC-990*

MODE   ◄   ▲

RESET   ↵   ◇▼

Position

Torque

Cycle

N G

mountz the torque tool specialists

(Air)Driver   RS232C

HDC   Encoder   Interface (I/O)

Power Input DC24v 1A

Power On/Off

STC30 Plus - Plug-in location

Hybrid of DC Tools (bottom location)

Encoder (bottom location)

Interface 25P i/O (bottom location)

Air Screwdriver Plug-in location* requires porting kit (top location)

RS-232C - firmware upgrade (top location)

Cable Chart
For Connecting Tools to Posi Control DPC-990

Cable/Tool	Item #
STC30 Plus	260159
DC Tools	260160
Hybrid	260161
Air Tool Porting Kit	260162
DELVO DLC 1213 AD /CA /IF controller	260163

Dimensions

Hios controller & driver

POSI-CONTROL
DPC-990

- Position
- Torque
- Cycle
- N G

(Air)Driver   RS232C
HDC   Encoder   Interface (I/O)

15mm
52.5mm
135mm
52.5mm
135mm

6- Ø5mm

147mm
171mm
52.5mm

Power
ON/OFF
STC30

51mm

Air driver
Delvo driver   RS-232 (firmware upgrade)

HDC controller
+
DC Tools   Encoder   25P Interface I/O
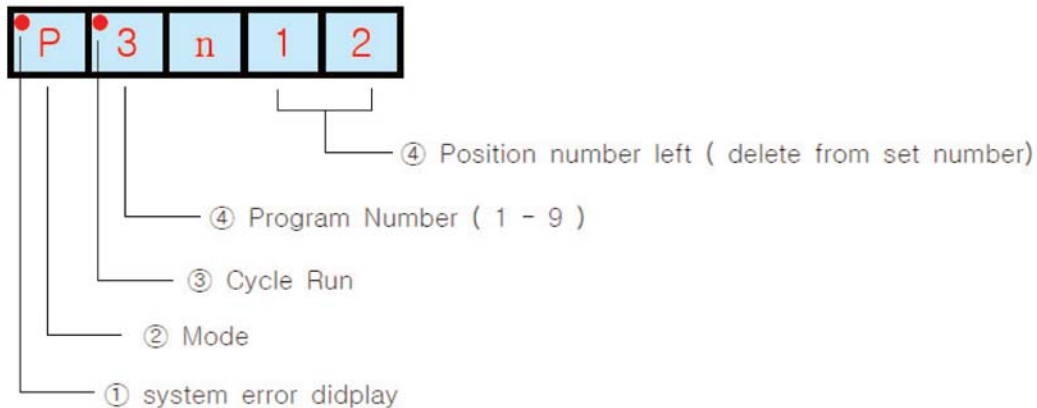
Operation

There are 5 modes. The initial mode is Operating mode.

Mode is changed from Operating to (Log In) to Program to Parameterto Edit by mode button.

Operating mode: Working mode

Log-in mode: To enter into Program, Parameter and Edit mode, it requires password.
The factory setting initial password is ''0''.
The password log-in is effective until the power off.

Program mode: Two possibilities :
1) Auto program : Just fasten screws on each position, Min/Max and position data will be saved automatically.
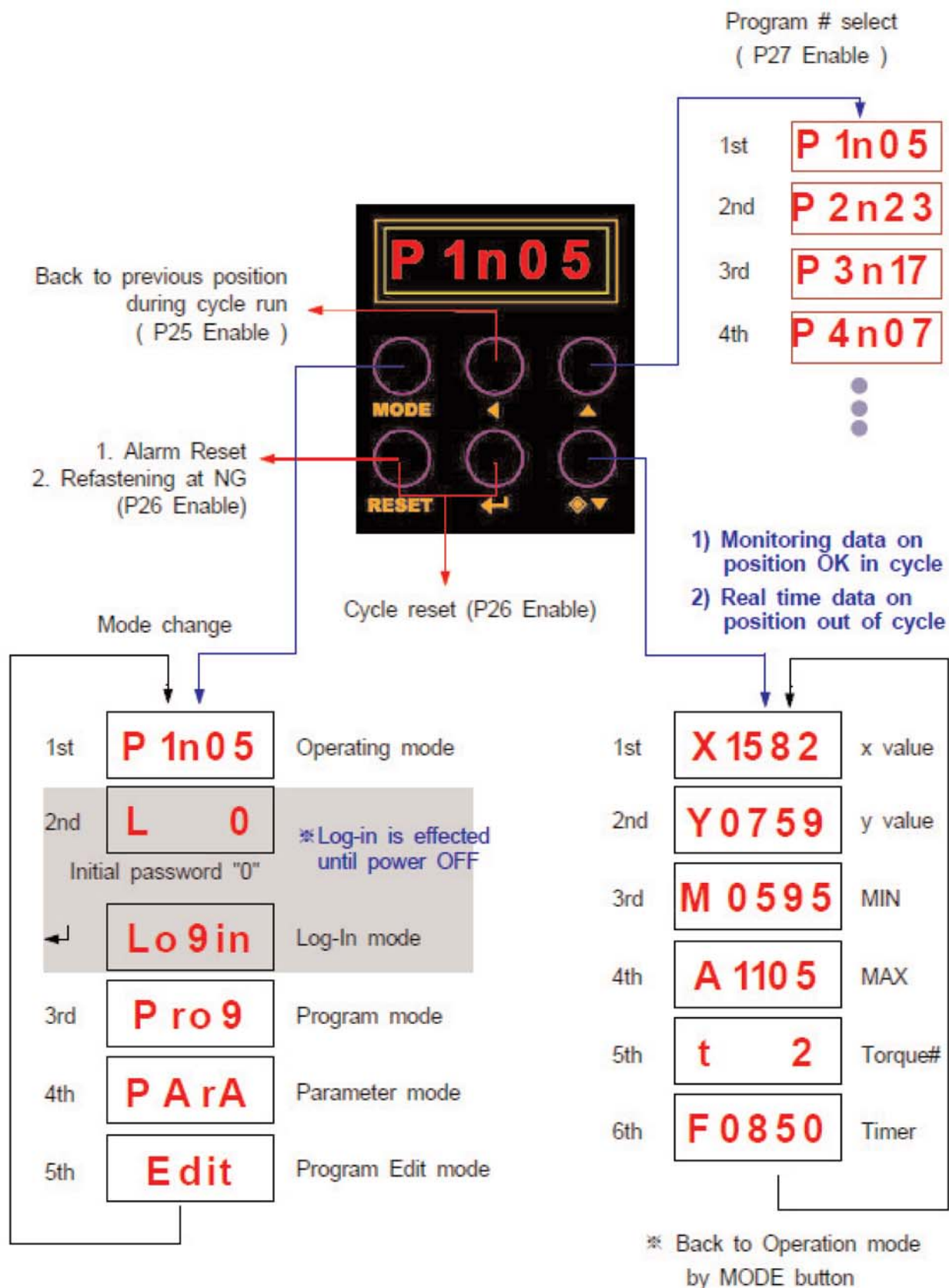
2) Manual program : Move to each position and select Torque preset # and press Enter button to save data.

Parameter mode: All parameters can be changed on Parameter mode except X/Y, Min/Max value and Torque #
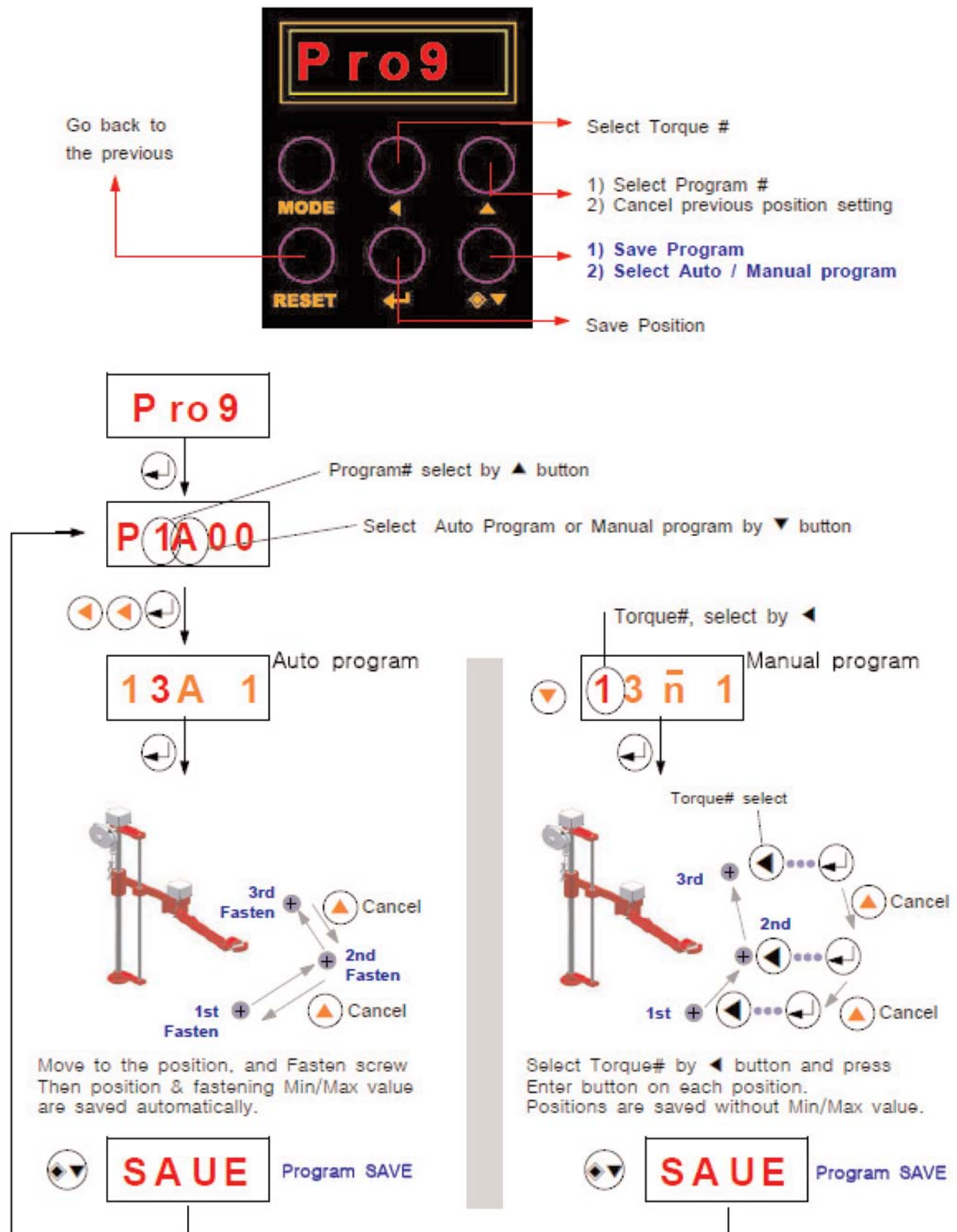
Edit mode: Min/Max value and Torque # can be changed on Edit mode.

Key button & FND display on each mode

Program # select
(P27 Enable)

1st **P 1n05**

2nd **P 2n23**

3rd **P 3n17**

4th **P 4n07**

Back to previous position during cycle run (P25 Enable)

P 1n05

1. Alarm Reset
2. Refastening at NG (P26 Enable)

MODE ◀ ▲

RESET ↵ ◈▼

Cycle reset (P26 Enable)

1) Monitoring data on position OK in cycle
2) Real time data on position out of cycle

Mode change

1st	**P 1n05**	Operating mode
2nd	**L 0**	＊Log-in is effected until power OFF
	Initial password "0"	
↵	**Lo9in**	Log-In mode
3rd	**Pro9**	Program mode
4th	**PArA**	Parameter mode
5th	**Edit**	Program Edit mode

1st	**X1582**	x value
2nd	**Y0759**	y value
3rd	**M 0595**	MIN
4th	**A 1105**	MAX
5th	**t 2**	Torque#
6th	**F 0850**	Timer

＊ Back to Operation mode by MODE button

Program Mode

Pro9

Go back to
the previous

Select Torque #

1) Select Program #
2) Cancel previous position setting

MODE

1) **Save Program**
2) **Select Auto / Manual program**

RESET

Save Position

Pro9

↵

Program# select by ▲ button

P1A00

Select Auto Program or Manual program by ▼ button

◀ ◀ ↵

13A 1 Auto program

↵

Torque#, select by ◀

▼ **13n̄ 1** Manual program

↵

3rd Fasten + ▲ Cancel

+ 2nd Fasten

1st Fasten + ▲ Cancel

Move to the position, and Fasten screw
Then position & fastening Min/Max value
are saved automatically.

Torque# select

3rd + ◀ •••• ↵

2nd + ◀ •••• ↵ ▲ Cancel

1st + ◀ •••• ↵ ▲ Cancel

Select Torque# by ◀ button and press
Enter button on each position.
Positions are saved without Min/Max value.

◆▼ **SAUE** Program SAVE

◆▼ **SAUE** Program SAVE

1) Auto Program
It is useful to program position with MIN / MAX fastening time setting for OK, NG. According to the percentage of fastening time on **P19 & P20 (see page 11)**, the posi controller calculate MIN & Max value from fastening time immediately after torque up.

Each Min/Max value can be edited on EDIT mode.
The torque # selecting is also allowed by manually with < button.
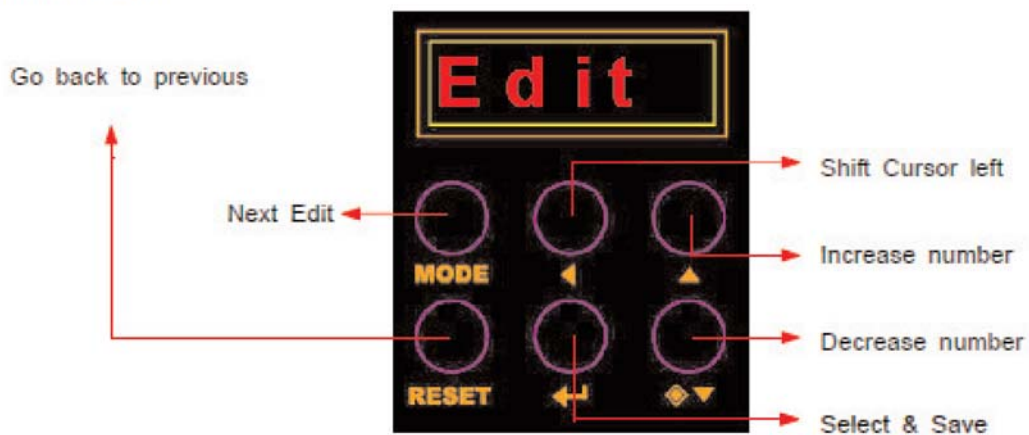
2) Manual Program
Move to the position, select torque # with < button on each position and press Enter to save it.

Parameter Mode

Parameters except torque #, MIN/MAX value can be changed.
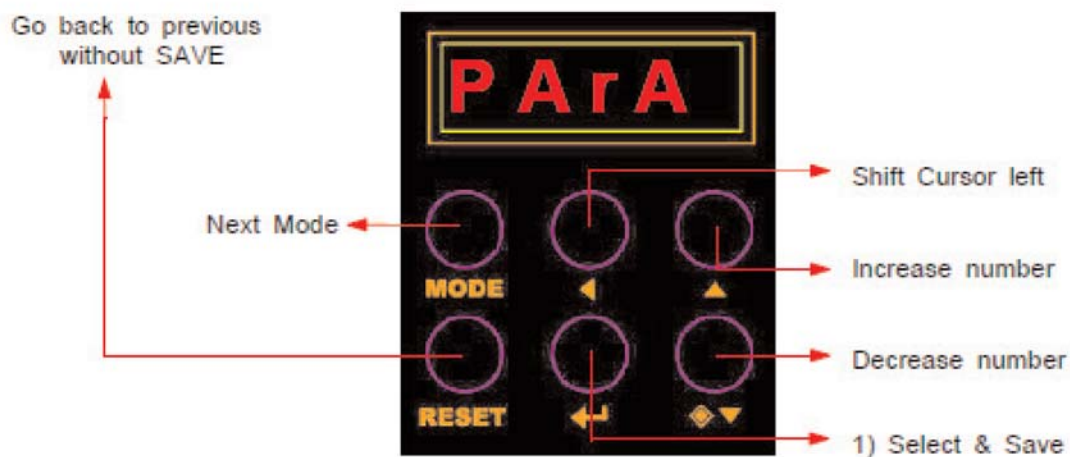
Torque #, Min/Max value on each position of each program can be changed on EDIT mode.

Go back to previous

Next Edit ←

MODE

RESET

Shift Cursor left

Increase number

Decrease number

Select & Save

Select program# for edit

P 1n05

MODE x 3

Edit

↵

E 1n02 — Move to the position which to be edited and press Enter button for choosing. Enter button is allowed on the Position OK

Target position for Edit

2nd

↵
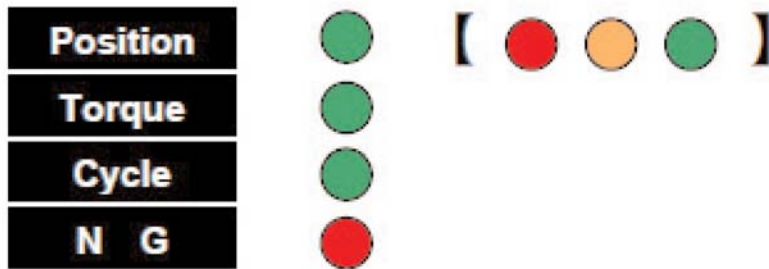
n̄0595 — Edit MIN value (ms) by ▲▼, and save by Enter button

MODE **A 1105** — Edit MAX value (ms) by ▲▼, and save by Enter button

MODE **t   2** — Edit Torque # by ▲▼, and save by Enter button

1. Position LED
    Red: Out of the target position
    Orange: On the target area with the tolerance on P11
    Green: On the target position with the tolerance on P12

2. Torque LED
    Off: Default
    Green: When it receives external torque UP signal, ON (0.2 sec) ⟶ Off

3. Cycle Complete
    Off: Default
    Green: After complete of cycle, green LED turns ON for 0.2 seconds and OFF

4. NG (Red)
    - Fastening NG by min or max time setting with Mountz E-DRIV, HIOS or Delvo electric
      screwdrivers
    - All errors from extenal signal from Hybrid or DC tool

| P #	Name	Specification	Default
P01-P09	Program #	Save sequential target positions on P1-9	0
P11	Position area tolerance	Tolerance of area for Orange LED Input : 0.1 – 10.0 (unit %)	5
P12	Position OK tolerance	Tolerance of x,y positions to the target Input : 0.1 – 10.0 (unit %)	2
P13	Position Buzzer	Buzzer sound on the target position 0 : Disable 1 : Enable	1
P14	Cycle complete Buzzer	Buzzer sound on the target position 0 : Disable 1 : Enable	1
P15	Program type	Program type is selected 0 : Non sequential positions 1 : Sequential positions (Default)	1
P16	Tool select	Select the connected tool 1 : Hybrid HDC controller 2 : Stanley & Other DC Tools 3 : STC30 (4.2 or prior) signal port 4 : Hios 5 : Air driver with Start trigger signal + motor RUN signal 6 : Delvo & Other low voltage Electric Tools 7: STC30 v4.3 or STC40	1
P17	T1 (Air driver) Trigger start	T1 Minimum time set 0 – 9999 ms	0
P18	T1 (Air driver) Shut off	T2 Minimum time set 0 – 9999 ms	30
P19	MIN fastening time percentage	Percentage (%) from fastening time for Auto programming 0 – 100 (%) ''0'' : No use	50
P20	MAX fastening time	Percentage (%) from fastening time for Auto programming 100 -200 (%) ''0'' : No use	130

P21	Cycle reset by I/O	Cycle reset by I/O Disable : 0 Enable : 1	1
P22	Number of refastening	Number of refastening on a position 1 – 9	1
P23	Refastening Enable	Refastening enable Disable : 0 Enable : 1	1
P24	Skip a position	Skip one position declared NG to the next one without refastening Disable : 0 Enable : 1	0
P25	Back to previous	Back to previous position by < button Disable : 0 Enable : 1 Note : P23 must be 0 (disable)	1
P26	Reset button on front panel	Reset button front panel for 1) Reset 2) Cycle reset (Reset + Enter) Disable : 0 Enable : 1	1
P27	Program select on front panel	Program select by < button Disable : 0 Enable : 1	1
P28	NG signal output time duration	Time duration setting of NG output signal. 0.1 - 2.0 seconds	1
P51	Password	Password for Log in can be Changed 0 - 9999	0
P52	Parameter Intialize	Every parameter change to the factory intial setting. Key in "77" and press Enter for intializing .	0
P53	Software version	Software version display can be changed	

Error Code Display

Error	Error Description	Solution
101	Fastening time is lower than Min. Value	Pattern error / Reset
102	Fastening time is over than Max. Value	Pattern error / Reset
103	Error signal from external tool	Auto Reset without signal
200	Parameter Read Error	System error / Reset
201	Check sum error	Com error / Reset

Interface
The configuration of the 25P I/O port is for remote control
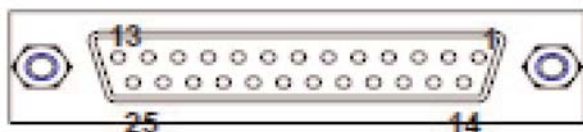
Input to Controller

Pin # Configuration
1   PS1 (Program Selecting)
2   PS2 (Program Selecting)
3   PS3 (Program Selecting)
4   PS4 (Program Selecting)
5   Repeat Fastening Enable
6   Cycle Stop & Reset
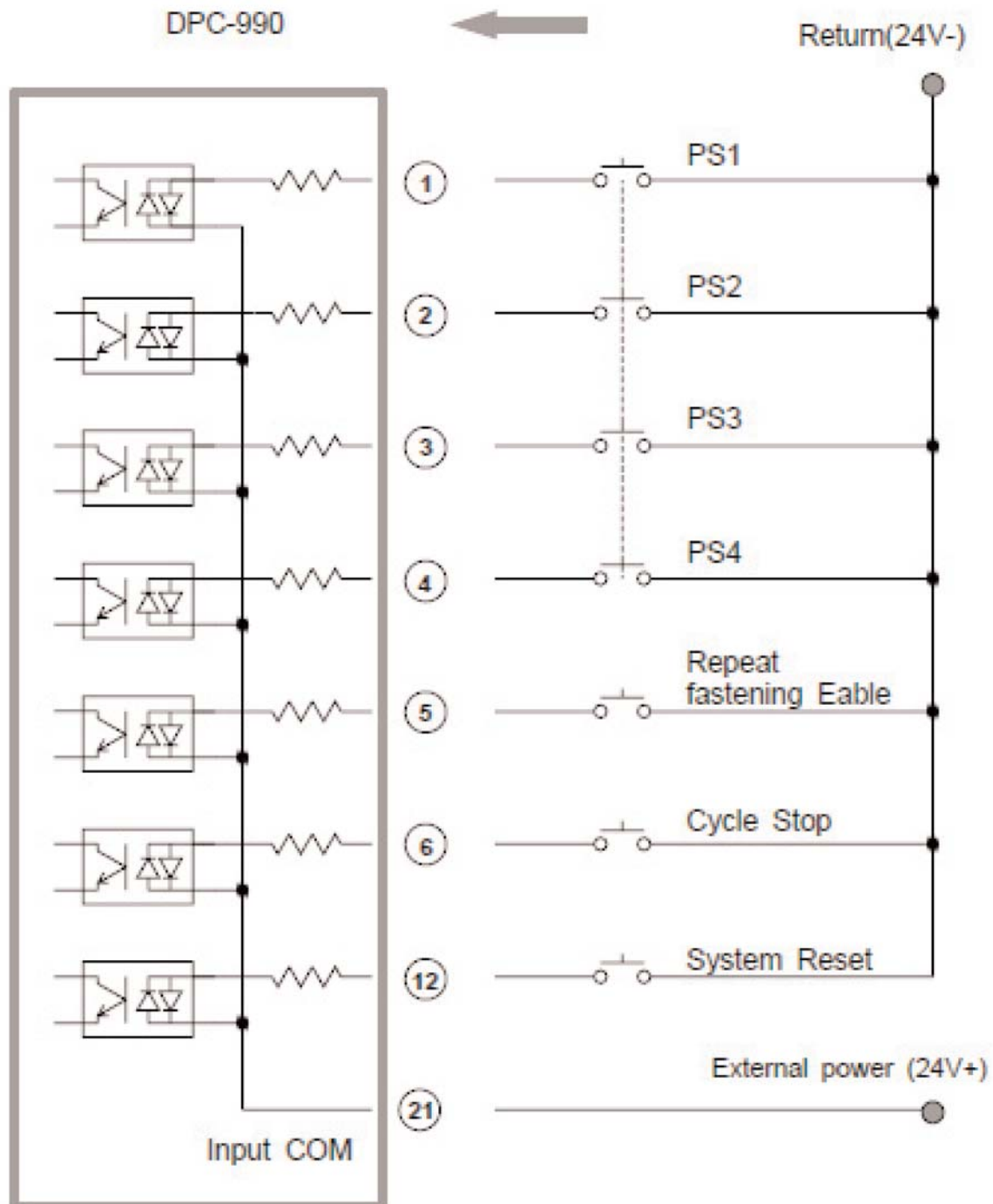12 Reset

Output from Controller (24 VDC, 50mA max

Pin # Configuration
7   Position Ok
8   Motor Run
9   Torque Up
10 Alarm (Error)
11 Cycle Complete
21 Input COM
22 Input COM
23 Output COM
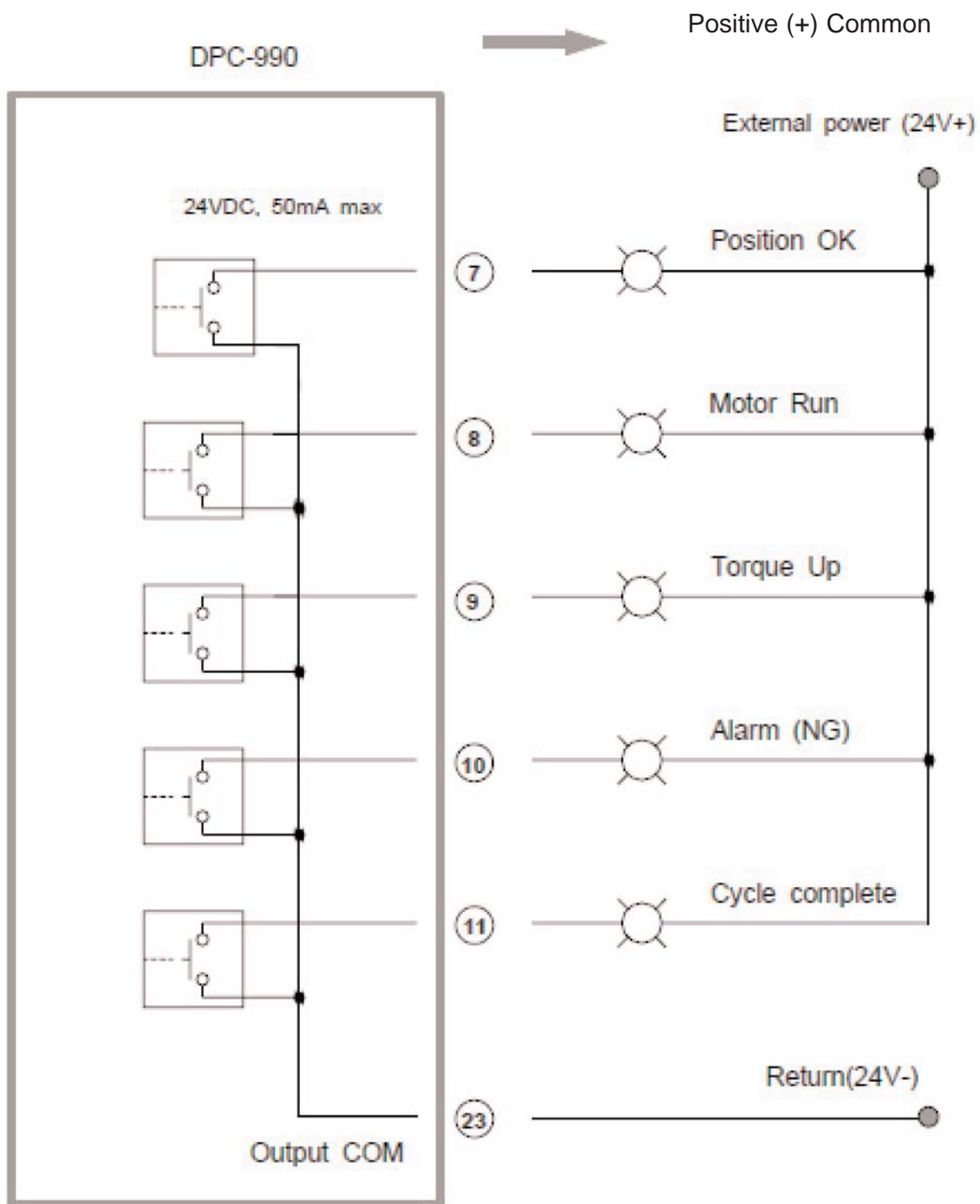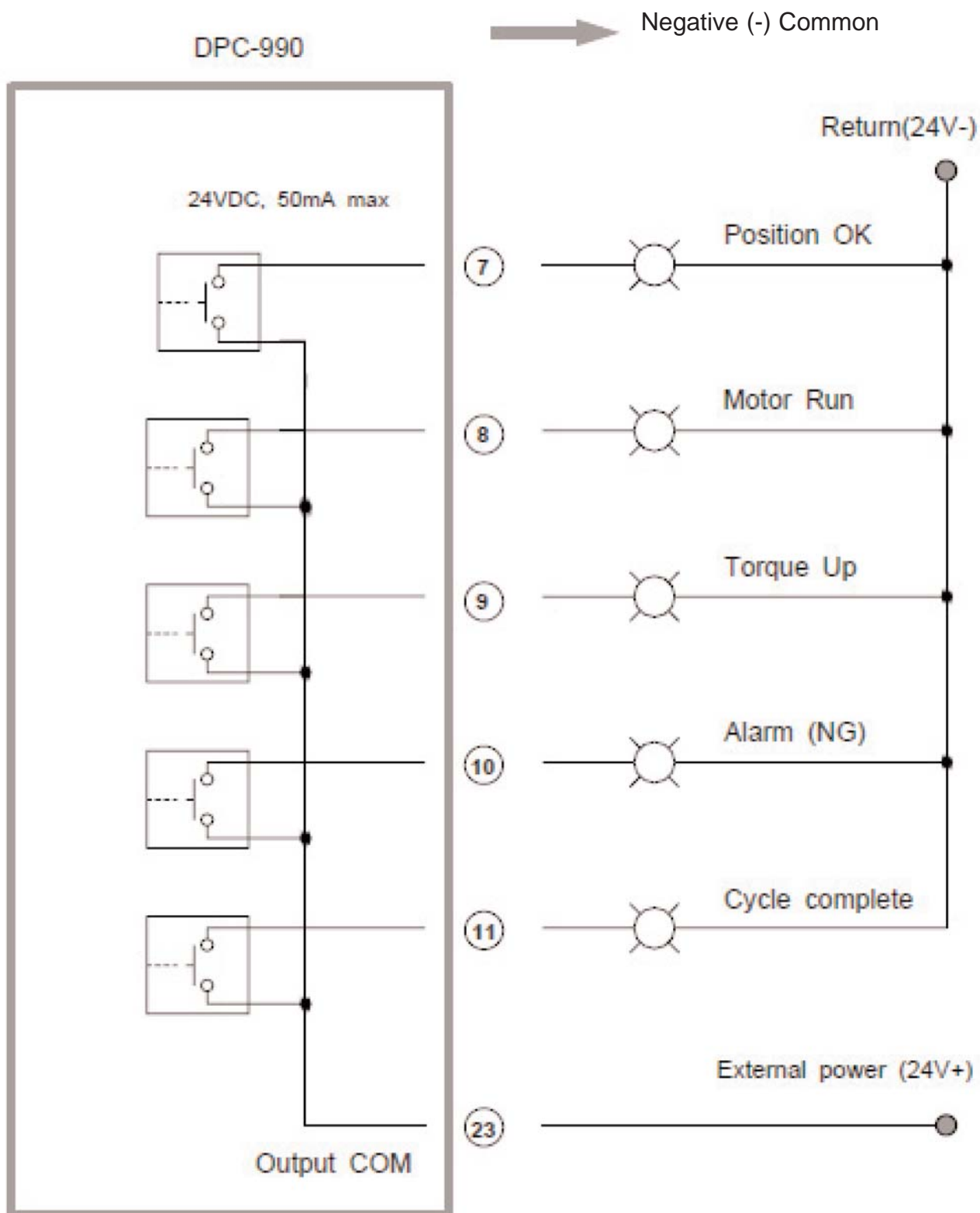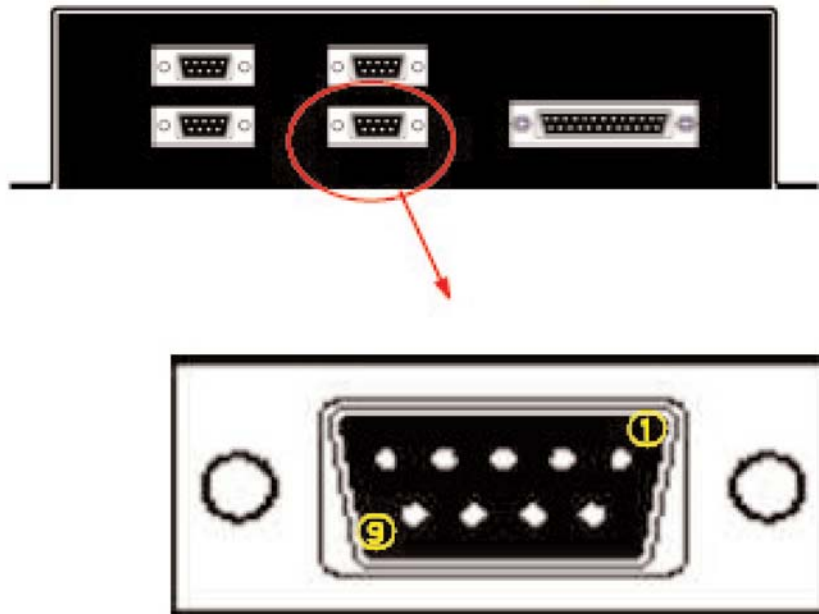24 Output COM

25P I/O Interface (INPUT)

Positive (+) Common

DPC-990

Return(24V-)

Terminal	Label
1	PS1
2	PS2
3	PS3
4	PS4
5	Repeat fastening Eable
6	Cycle Stop
12	System Reset
21	External power (24V+)

Input COM

25P I/O Interface (OUTPUT)

Positive (+) Common

DPC-990

External power (24V+)

24VDC, 50mA max

(7) Position OK

(8) Motor Run

(9) Torque Up

(10) Alarm (NG)

(11) Cycle complete

(23) Return(24V-)

Output COM

DPC-990

Return(24V-)

24VDC, 50mA max

(7) Position OK

(8) Motor Run

(9) Torque Up

(10) Alarm (NG)

(11) Cycle complete

External power (24V+)

(23)

Output COM

Encoder Connection

Pin #	Name	I/O	Wire	Specification
7	DC24V+	IN	Brown	Sensor (X Axis)
2	Encoder Out X	In	Black	Sensor (X Axis)
4	DC24V-	In	Blue	Sensor (X Axis)
8	DC24V+	IN	Brown	Sensor (Y Axis)
3	Encoder Out Y	In	Black	Sensor (Y Axis)
5	DC24V-	In	Blue	Sensor (Y Axis)
1	Not Used			
6	Not Used			
9	Not Used			

Screwdriver connection
with STC30 and STC40 Transformer

For STC30 Plus 4.2 or prior models - P16: select no. 3
For STC40 Plus 4.3 or STC40 models- P16: select no. 7

STC30 or STC40

RJ-11
Modular Jack
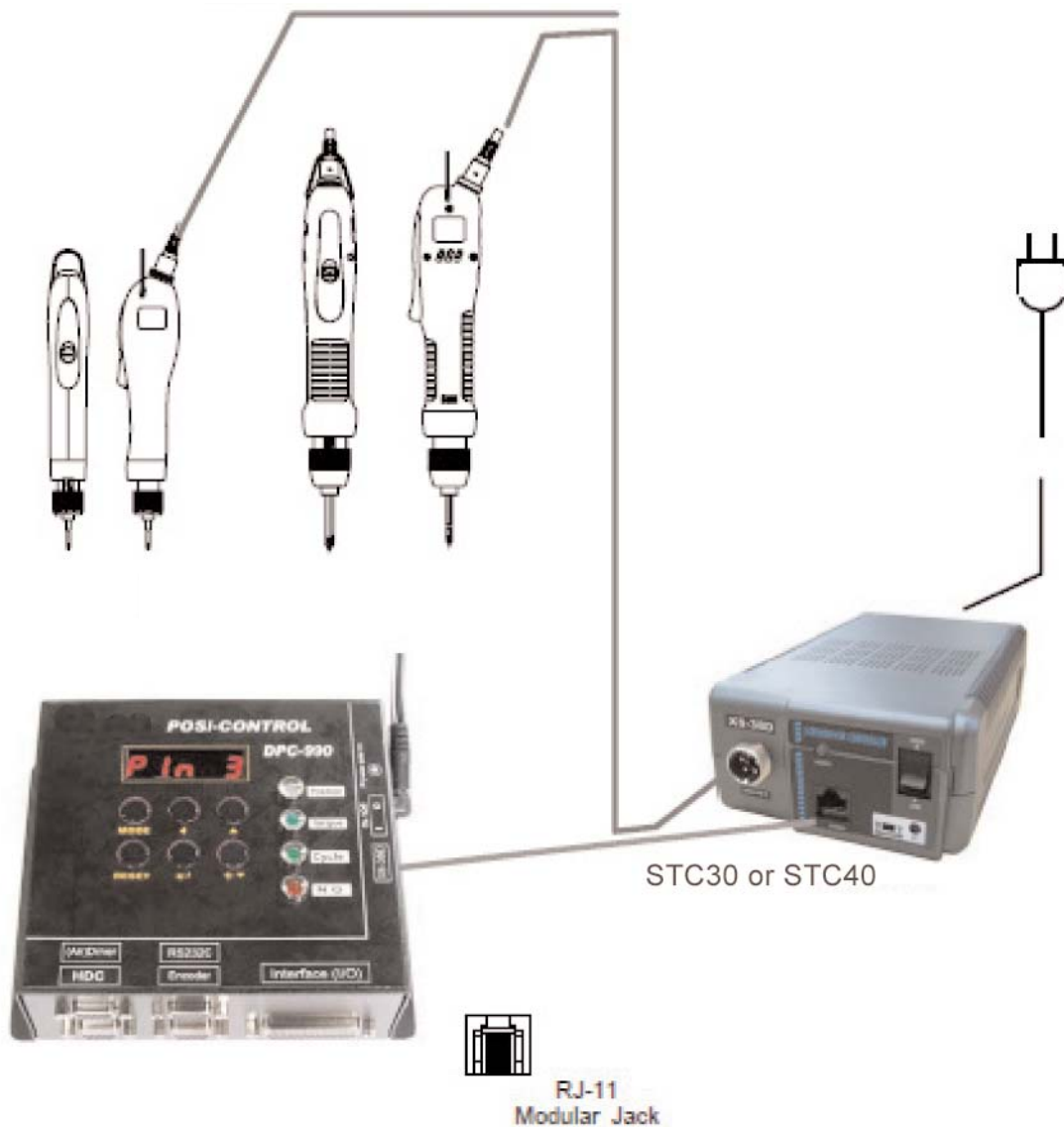
POSI Controller DPC-990

■ Connection Cable (14-801120)

Cable Pin connection
1 - 6
2 - 5
3 - 4
4 - 3
5 - 2
6 - 1

DPC-990   2M   XS-38D

* Same connection cable to the Scout

Screwdriver connection
with Delvo screwdriver

Pin	Name	I/O
1	Lever Start	IN
2	Lever Start (Return)	IN
3	Torque Up	IN
4	Torque Up (Return)	IN
5	Driver Lock	Out
6	Driver Lock (Return)	Out
7	DC24+	
8	Solenoid	Out
9	DC24V Return	

Air driver with two signals

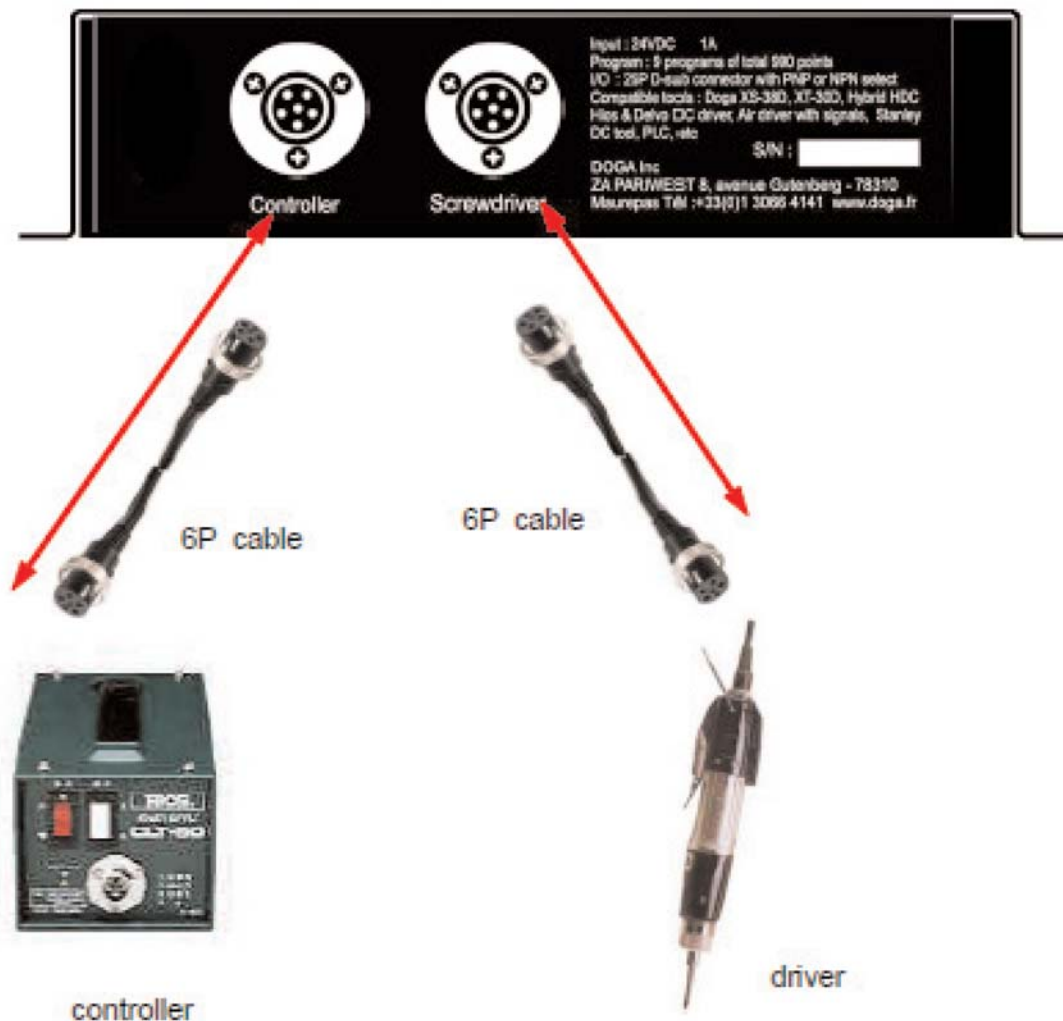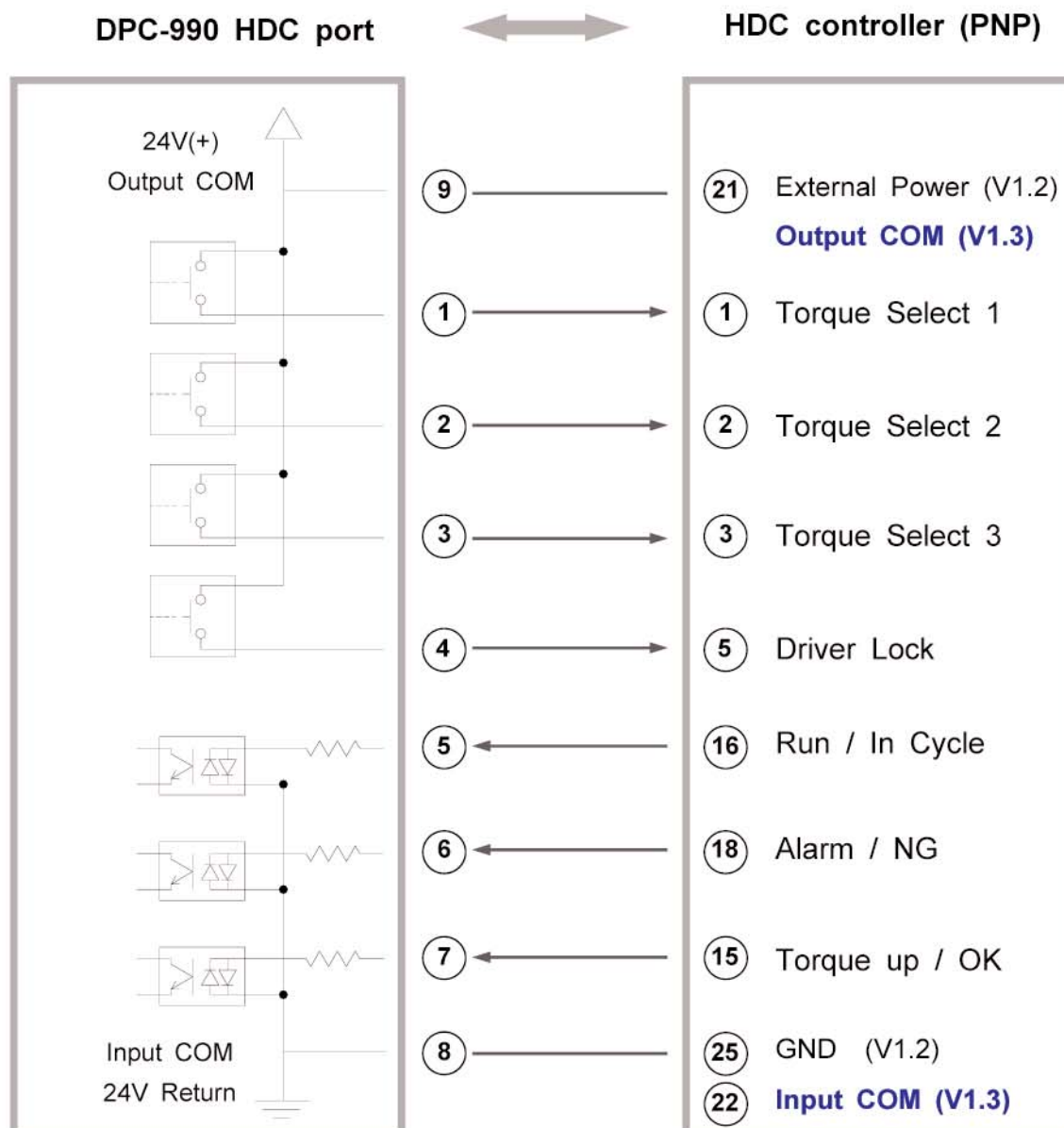| Pin	Name	I/O
1	Lever Start	IN
2	Lever Start (Return)	IN
3	Torque Up	IN
4	Torque Up (Return)	IN
5	Driver Lock	Out
6	Driver Lock (Return)	Out
7	DC24+	
8	Solenoid	Out
9	DC24V Return	
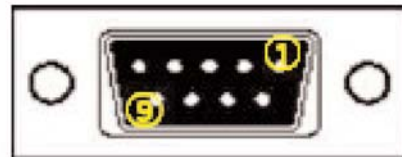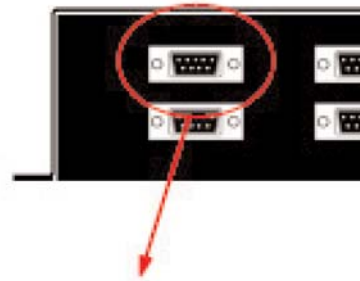
DPC-990 AIR Driver port ⟷ Air Driver wiring
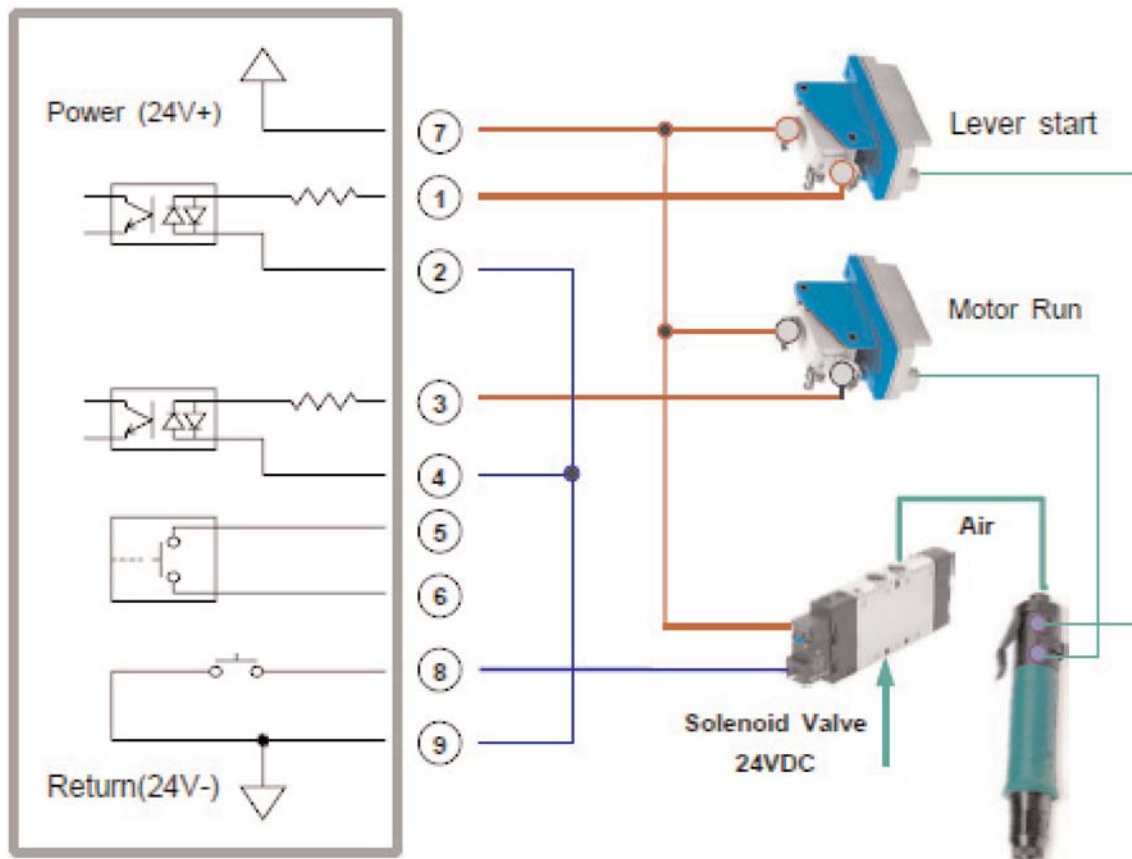
For connecting air tools to Posi-Control DPC-990, it requires Air Tool Porting Kit Item **# 260162**

Hios controller & electric screwdriver

P16 : select no. "4"

Wiring of HDC-40i (PNP Hybrid driver)

DPC-990 HDC port ⟷ **HDC controller (PNP)**

DPC-990 HDC port	Pin		Pin	HDC controller (PNP)
24V(+) Output COM	9	→	21	External Power (V1.2) / **Output COM (V1.3)**
	1	→	1	Torque Select 1
	2	→	2	Torque Select 2
	3	→	3	Torque Select 3
	4	→	5	Driver Lock
	5	←	16	Run / In Cycle
	6	←	18	Alarm / NG
	7	←	15	Torque up / OK
Input COM / 24V Return	8	→	25	GND (V1.2)
			22	**Input COM (V1.3)**

Wiring of KAPPA controller (Stanley Tool & Other DC Tools)

DPC-990 HDC port ⟷ **Kappa controller**

DPC-990 HDC port		Kappa controller
24V(+) Output COM	(9) → (B)	Output COM
	(1) → (P)	Torque Select 1
	(2) → (R)	Torque Select 2
	(3) → (S)	Torque Select 3
	(4) → (M)	Driver Lock
	(5) ← (C)	Run / In Cycle
	(6) ← (K)	Alarm / NG
	(7) ← (J)	Torque up / OK
Input COM 24V Return	(8) → (V)	24V Return

※ Caution
Don't connect A&B (on Kappa manual)
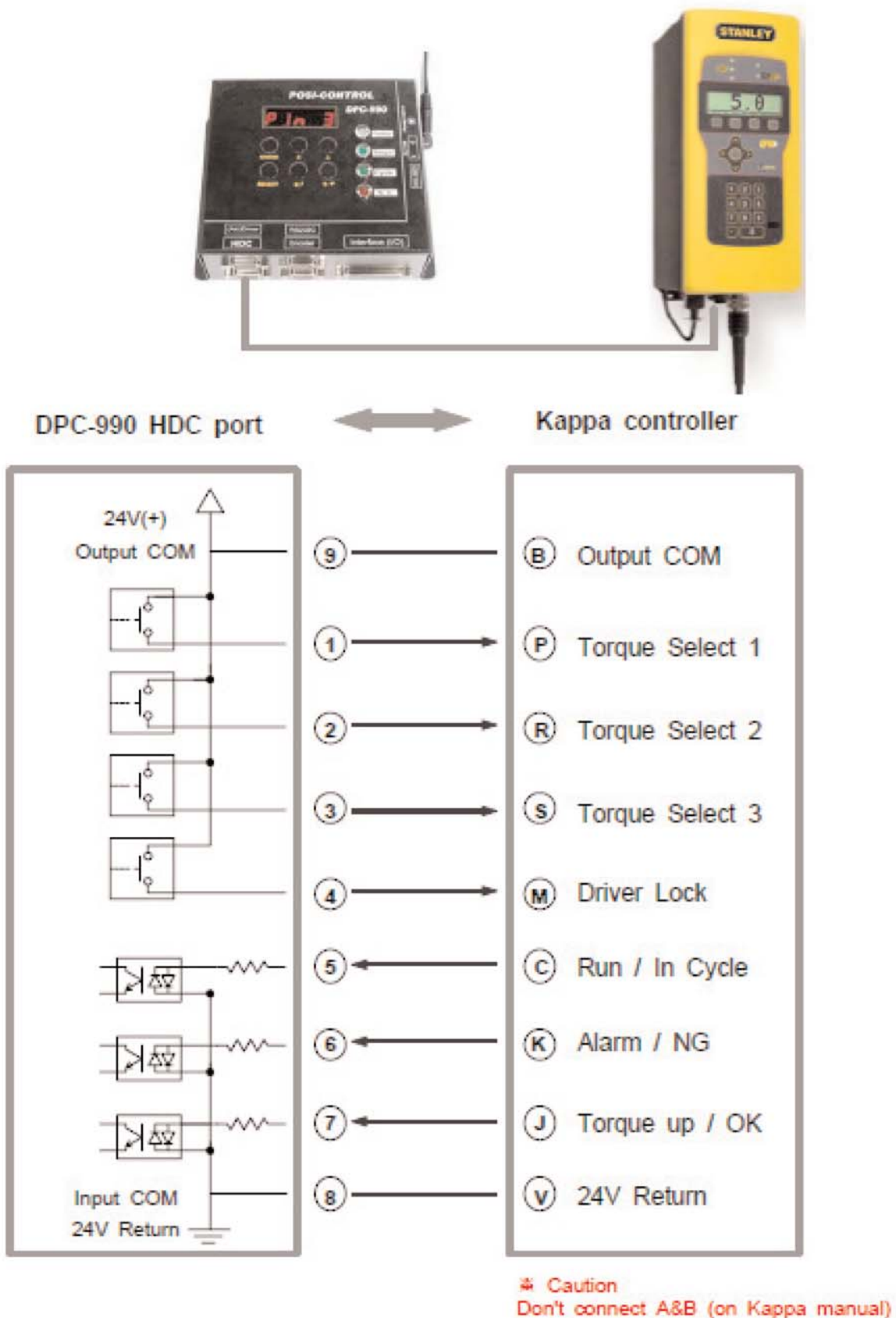
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